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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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PAN-JIN KIM

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STAAS & HALSEY LLP

SUITE 700

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EXAMINER

BROWN, RUEBEN M

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 09/179,872	Applicant(s) KIM ET AL.	
	Examiner REUBEN M. BROWN	Art Unit 2424	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,4-8,10-14,17,18,23,24 and 27-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) 1, 4-6, 17 & 27-29 is/are allowed.
- 6) ☒ Claim(s) 7,8,10-14,18,23,24 and 30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to the Hans reference have been considered but are moot in view of the new ground(s) of rejection.

Applicant's main argument with respect to Vancelette is that the reference does not meet the criteria of major channel and minor channels of the applicant's invention. On page 10 it is stated, "Vancelette does not set forth a primary channel, and separate minor channels. Rather, Vancelette sets forth equally based programs that can be selectively decoded...Thus, the primary signal/channel of Vancelette cannot be considered a major channel, when claim 1, for example further requires there to be minor channels related o the major channel".

First of all, it is pointed out that the claims do not require any specific relative difference in the content between the major channel and minor channel. In other words, the claims do not recite that for instance, the content on the major channel is of a certain subject matter, and that the minor channels carry content related to or linked to the major channel.

Applicant argues, in Vancelette "primary signal or program refers to the default program to be displayed". Examiner does not find any limitations that require anything other than such an arrangement. In other words, when a customer in Vancelette tunes to an RF channel (i.e., the

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claimed major channel; col. 10, lines 21-33) that carries multiple TV programs, then the audio & video programming that is associated with that RF channel, is presented to the viewer (applicant argues that this done by default). Vancelette goes on to teach that once the customer has tuned to the particular RF channel, then the customer can choose another program, (i.e., minor channel) that is being transmitted through the same RF channel. This technology reads on the claimed subject matter.

At col. 4, lines 1-15, Vancelette makes it clear that a primary signal, i.e. primary channel, is associated with network X, as well as additional alternate signals.

However, Vancelette does not explicitly discuss that the alternate video programs are presented to the viewer with channel numbers, even though it is taught that the viewer is provided with “an interactive graphical display that informs the user of the available options”, col. 5, lines 21-25. Therefore, it would have been obvious to present the alternate video programs to the viewer as sub-channels to the primary channel, with associated channel numbers as taught by Kim.

Even though Kim, explicitly refers to channels, i.e., channel numbers CH1, CH2 & CH3, as sub-channels, with respect to CH0, (col. 6, lines 19-25) applicant argues that the reference is vague and thus is not sufficiently to be enabling in the present invention. Examiner respectfully disagrees.

First of all, Vancelette provides the claimed **technology** of *‘displaying on a TV screen, a program of a minor channel received through the demanded major channel’*. Vancelette just does not disclose displaying the associated channel numbers. Thus, since Kim teaches displaying the channel number of a major channel CH0 and its sub-channels CH1, CH2 & CH3, the claimed subject matter is met. Even if Kim is broadly interpreted to merely represent four distinct and unrelated channels, as argued by applicant, the combination with Vancelette would still meet the claimed subject matter. Again, because the structure of the claims, i.e. receiving and displaying programming from a minor channel received through a major channel, is met by Vancelette, then applying Kim to Vancelette would teach one to display channel numbers to a primary channel, as well as its associated channels received through the primary channel, at least so the viewer will be able to know which channel is being selected, before the selection is made.

The viewer in Vancelette knows that he is looking at programs from Network X, when viewing the alternate programs. So one of ordinary skill in the art would have readily recognized the benefit of more explicitly showing the viewer the channel number associated with the alternate audio/video programs selections, as provided by Kim, at least in order to avoid confusion.

Secondly, examiner respectfully disagrees with applicant’s assertion that despite showing the channel numbers on TV screen, that Kim does not display the channel numbers. It does not appear vague, since Kim explicitly displays the channel numbers of the main channel and the sub-channels. Again, the combination of Vancelette & Kim, meets the claimed subject matter.

Regarding claims 12 & 14, applicant argues that the wrap-around technology of Keenan does not meet the claimed subject matter, because “it does not disclose how to determine if the minor channel number of the viewing program is a highest number...”. Examiner respectfully disagrees, since Keenan knows the channel number of each channel, in order to detect its positioning in the scan list; see col. 4, lines 3-65. Keenan teaches that system may loop around or wrap around separate list of channels, using the UP/DOWN button on a remote control. When the system reaches the highest channel number in the list, then the program associated with the lowest channel number is displayed and vice versa.

Claim Objections

2. Claim 12 is objected to because of the following informalities:

Claim 12, line 5 misspells the word ‘*minor*’, as ‘manor’. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 7-8, 10-11, 13, 18, 23-24 & 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vancelette, (U.S. Pat # 5,894,320), in view of Kim, (U.S. Pat # 5,838,386) & Naimpally, (U.S. Pat # 5,532,748).

Considering claim 7, the amended claimed method for displaying channel information on a digital TV for receiving digital multichannel TV broadcasting, comprising

‘selecting an RF channel corresponding to a major channel number selected by a user’, is met by the disclosure of Vancelette that teaches a customer selecting a primary channel, which is transmitted/delivered on a particular RF channel, see col. 10, lines 21-35.

‘displaying on a TV screen, as viewing program, a program of a minor channel received through the demanded major channel’, reads on displaying any one of the alternate programs displayed Vancelette that are received through the RF channel, i.e., network X, see col. 3, lines 35-45; col. 4, lines 1-6; col. 10, lines 50-58.

'displaying on the TV screen, minor channel numbers of programs received through the demanded major channel', Vancelette teaches that a plurality of minor channels may be received through a primary channels, col. 4, lines 6-15; col. 6, lines 5-50; col. 7, lines 25-67. Even though Vancelette discloses that the user is enabled to choose from a plurality of minor channels, see col. 6, lines 1-15, the reference does not discuss displaying the channel numbers of the alternate programming for the viewer.

Kim provides a teaching wherein on on-screen display (Fig. 6) shows the result of a user selection of a main channel, CH0. The TV screen simultaneously displays the three sub-channels CH1, CH2 & CH3, respectively, associated with the instant demanded main channel, CH0, see col. 6, lines 12-31. It would have been obvious for one ordinary skill in the art at the time the invention was made, to modify Vancelette to show the channel numbers of the instant alternate video programs as taught by Kim, at least to keep the user informed of which channel is which, and thus avoid confusion.

As for the specifics of displaying the channel number on a *'digital television screen'*, Vancelette appears to operate by converting the digital TV signal to an analog signal, and Kim does not explicitly discuss the use of a digital TV system/screen. Nevertheless, Naimpally teaches a system that transmits an NTSC analog like signal, as well as a digital signal. In order to quickly display a signal when the channel is being rapidly changed, Naimpally displays the NTSC signal. However, the receiver goes on to decompress and display the digital signal,

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because the digital picture has advantages over the analog displayed signal. Thus operating Naimpally, within Vancelette & Kim, would teach one to display the TV signals as a digital TV signals, instead of as an analog signal, as shown in Vancelette. It would have been obvious for one ordinary skill in the art at the time the invention was made, to modify Vancelette to provide for processing and displaying the received digital signal as a digital TV signal, as taught by Naimpally at least for the known advantage that digital TV signals have a higher image quality than analog TV signals.

Considering claim 8, the claimed subject matter reads on Kim, Fig. 6, wherein the minor channels are displayed on the screen from top to bottom.

Considering claim 10, the instant claim reads on displaying the TV programs from the channels of the lowest minor channel number, after the instant channel is selected, which is necessarily included in Kim.

Considering claims 11 & 13; Kim provides the user with the option to select one or more of the sub-channels, CH1, CH2 or CH3.

Considering claims 18 & 24, the claimed apparatus and device for displaying channel information on a digital TV, comprising elements that correspond with subject matter mentioned above in the rejection of claim 1, are likewise treated.

Regarding the additional features recited in claim 18, 'wherein the display displays minor channel numbers and the major channel number simultaneously in a format of X, X-1, X-2...X-n, wherein X is the major channel number and 1,2...n are the minor channel numbers, and n is the highest minor channel number', is also met by the disclosure of Fig. 6, which displays main and sub-channels, using the syntax, CH0, CH1, CH1 & CH3.

Considering claim 23, Vancelette teaches that the customer may alternatively view two programs as a split-screen or PIP format. Thus, the default of Vancelette is that once the customer chooses the main or alternate video program, that program is displayed full screen on the TV set, without using the split-screen or PIP format. This disclosure meets the claimed subject matter, since if a TV show is displayed as a full screen then the other video alternate, i.e. minor channels are not being displayed.

Considering claim 30, Vancelette teaches that the plurality of digital channels are multiplexed together and modulated on a single RF channel, col. 4, lines 1-15; col. 8, lines 21-45, which meets the claimed subject matter.

6. Claims 12 & 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vancelette, Kim & Naimpally, in view of Keenan, (U.S. Pat # 5,161,023).

Considering claim 12, the instant claimed feature reads on an endless loop operation such that once the user gets to the top of a list of programs, the next program to be highlighted (selected), would be the program at the bottom of the list, and vice versa. Keenan (col. 1, lines 51-59) discloses such a technology. It would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Kim, with the known technology of 'wrap around' lists as taught by Keenan (Figs. 3A; 3B; col. 3, lines 40-52), at least for the desirable purpose of avoiding the user having to move the cursor in the other direction in order to reach the opposite extreme of the instant list, which would be burdensome on the user, at least in the case of long lists of programs.

Considering claim 14, as discussed above in the analysis of claim 12, it would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify Kim with the well known 'wrap around' technology disclosed in Keenan (Figs. 3A, 3B). However, claim 14 requires the additional step that a user is automatically connected to a succeeding or preceding list of minor channels, depending on whether the user's cursor is currently selecting the highest minor channel or lowest minor channel, respectively of the currently active minor channel list, which is also reads on Keenan (Col. 5, lines 1-45 & Fig. 4), which teaches connecting lists of channels. It would have been obvious for one of ordinary skill in the art at the time the invention was made, to modify the combination of Kim & Keenan to move to a next list of channels, at least for the desirable advantage of avoiding the user having to manually select the next list of channels.

Allowable Subject Matter

5. Claims 1, 4-6, 17 & 27-28 are allowed. Considering claims 1 & 17, prior art of record teaches all subject matter, except the newly added, *'wherein the displayed minor channel numbers comprise at least one minor channel number corresponding to a program of a minor channel which is not currently displayed on the digital TV'*. Claims 4-6 & 27-29, depend from allowable claims, and are thus likewise allowable.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

A) Boyce Teaches that an HDTV channel may carry multiple SDTV channels.

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Any response to this action should be mailed to:

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or faxed to:

(571) 273-8300, (for formal communications intended for entry)

Or:

(571) 273-7290 (for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Reuben M. Brown whose telephone number is (571) 272-7290. The examiner can normally be reached on M-F(8:30-6:00), First Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Kelley can be reached on (571) 272-7331. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300 for regular communications and After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Reuben M. Brown/
Patent Examiner, Art Unit 2424